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ABSTRACT

Based on the idea that poor reading skills may be contributing to academic failure among Spanish-speaking high school students and on research suggesting that classification skills may help in reading, a set of lessons focusing on classification was developed for this group. The bilingual lessons use various classification tasks to teach students how to infer the main idea in paragraphs in English. The lessons are designed to follow a Piagetian developmental pattern beginning with concrete classification and moving to pictorial, abstract, and symbolic classification experience. When used with one group of students, the technique appears to have been successful in teaching both the logic of classification and a method for inferring the main idea. (MSE)

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USING CLASSIFICATION LESSONS TO TEACH HISPANIC SECONDARY STUDENTS INFERENCE

by

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Running Head: Using Classification

Abstract

Very little research has been conducted in teaching reading to Spanish-speaking secondary students, yet their rate of non-completion of high school continues at an alarming rate. A lack of English reading skills may contribute to this problem. Several researchers concluded that classification skills are important in reading skill development. Recent research in reading conducted with English-speaking secondary students indicated statistical support for the horizontal instructional model. Horizontal instruction utilizes classification skills matched with the student's level of cognitive development as part of the learning experience. This report provides examples of how this type of instruction can be utilized by classroom teachers. The lessons appeared to be beneficial when used to teach Spanish-speaking secondary student how to infer the main idea of paragraphs in English. Further research is indicated.

INTRODUCTION

Hispanic high school students have scored consistently below the national average in all areas of academic achievement as measured by standardized acheivement tests. In a recent survey of 6,698 Hispanic high school students, the average achievement scores in mathematics, reading, and vocabulary shows that all Hispanic subgroups performed uniformly lower than white non-Hispanics (Duran, 1983). Research based on data from the U.S. Census and the U.S. Department of Education indicates that Hispanics, aged 14 - 19, are twice as likely not to have completed high school as white non-Hispanics. These data have not changed substantially during the 10-year period, 1968-1978. (Rosen and Ortego, 1969; Brown, Rosen and Hill, 1980).

Since many of these students encounter problems learning to read in English, it seems reasonable to assume that this may be one of the contributing factors in their low achievement and low completion rate of high school. Although older bilingual students now comprise the fastest growing group of non-English-speaking students in the United States, very little research has been addressed to the literacy needs and problems of these students (McGroarty, 1982). The lessons presented in this article consitituted one part of an investigation into the cognitive process of Spanish-speaking secondary students when they are processing English text.

By the time students enter high school, whatever their linguistic orientation, they are faced with many cognitive tasks that vary from class to class. In a Piagetian developmental

model, students who enter high school are usually in transition between concrete and formal operations (Lowery 1981b). Generally, they perform certain operations such as seriation and classification with concrete objects. However, they may not have developed all of these abilities at a symbolic or abstract level.

Reading, which is critical for success in school, consists of symbolic and abstract experiences. The symbols represent ideas and concepts, which the reader must process within his own experiential framework. Barrett (1968) and Gerhard (1975) write that one cognitive skill necessary in developing higher level reading skills is classification. In order for students to read at the inferential level, Gerhard contends, they must be able to classify at the abstract or symbolic level.

In an attempt to examine the relationship between classification skills and reading, research was conducted with English-speaking secondary school students, teaching them the strategies necessary to identify the implied main idea of paragraphs, (Hadsell 1978; Stein 1979; Tingly 1980; Berget and Valverde 1983). These studies have shown that experiences based on the concept of horizontal instruction have helped English-speaking students improve their comprehension skills. The concept of horizontal instruction derives from Lowery's (1977, 1981a) interpretation of Piaget's theories concerning cognitive development and classification skills. With this model, the student is challenged to use a particular mental operation, e.g., class-inclusion, with many different materials.

Class-inclusion is one type of classification technique indentified by Piaget by which the student can classify objects, for example, into sub-categories and then identify the main category or class to which all the sub-categories belong. Lowery suggests that students learn something most readily when they are first provided with concrete, pictorial, and finally, abstract or symbolic classification experiences during the learning process.

This article discusses how lessons based on various classification tasks can be used to teach Spanish-speaking secondary students how to infer the main idea of paragraphs. It was my opinion that since classification lessons were successful in helping English-speaking students inferential skills, this same paradigm should prove successful with Spanish-language dominant students. Elaborating on the models previously used, (Tingly, Valverde, et al, I developed a series of bilingual lessons aimed at providing the students with a strategy for identifying the implied main idea of paragraphs in English. The students who participated in the study came from a school located in the San Francisco Bay Area. The district was large and multicultural. The students who received the classifcation lessons appeared to benefit from the lessons.

In addition, in order to facilitate learning among these particular students, some of the lessons are presented bilingually. The instructor may want to present one lesson in Spanish followed by a similar lesson in English or use the alternate language (Spanish/English) approach. The lessons, therefore provide a general guide that any classroom

teacher could use as a basis for his own curriculum.

METHOD

The Classification Lessons

Following Lowery's interpretation of Piagetian concepts, the first set of lessons help the students to classify objects into part-whole relationships. This fist step in learning to classify is referred to again and again, as the students progress through the various types of lessons.

One of the basic principles of bilingual education is that limited English proficient students will learn more effectively is concetps are tuaght in their native lnaugage. It seems reasonable to assume that students will learn more when explanations and exercises are presented in a language they understand than if they are presented in a language they do not understand. Research by Kaufman (1968) and Escamilla (1985) indicated a positive relationship between Spanish and English reading. It was therefore, my opinion in designing the lessons, that the concrete, pictorial, and beginning word and sentence classification lessons are more effective if they are presented bilingually.

The following descriptions of each lesson will contain sections named "Lesson Content" and "Student Task". These examples represent several types of lessons that should be included in the hierarchy of classification lessons.

CONCRETE CLASSIFICATION (present bilingually)

The concrete classification lessons orient the students to think in part-whole relationships. The following is an example

of just one lesson in categorizing objects. The instructor should present at least four - five such lessons, using a variety of objects. The students can work in small groups or pairs.

Lesson Content	Student Task
Categories offered/ group of related objects given	Students chose category from multiple choice

Materials: 3 paper squares - 1 blue, 1 orange, 1 yellow

3 paper triangles - 1 blue, 1 orange, 1 yellow

3 paper circles - 1 blue, 1 orange, 1 yellow

Directions: Give an envelope with all nine shapes to each group of students. Ask them to arrange the shapes in as many classes as they can and label their groups. The instructor then asks the students: "If the envelope you have said 'shapes' on the outside, what groups of things would you put into the envelope to support that idea? The same procedure follows using 'color' as the idea or topic. The instructor incourages the students to express the processes they used to select the shapes and colors they put into their envelopes.

PICTORIAL LESSONS (present bilingually)

In the next level of difficulty, the students experience five - six classification lessons, using a variety of pictures. The logic is identical to that of the concrete lessons, i.e., part-whole relationships.

Lesson Content	Student Task
Picture depticting a scene is given	Students discuss details in picture and infer topic

Students infer categories, array of pictures given	Students organize pictures into categories and write topic of pictures

1. For example, all the students look at two pictures: a) a single tree against a cloudy, dismal background, b) a Mexican fiesta, including a table with food, mariachis, people talking. First, the students examine the details and name them. Next, the students write what they think is the topic of the pictures. Tell the students they were able to infer the topic of the pictures by using the details. Explore with the students the strategy they used to identify the topic of the pictures.

For the next lesson, ask the students to work in pairs. Give each pair two envelopes, each containing pictures that contain sub-classes which belong to a larger class. Pictures of different animals i.e, land, air, and sea make this an interesting activity. Ask the students to group the pictures and then write the topic of the pictures on the outside of the envelope. After the students have practiced classifying the pictures, the instructor leads a discussion, pointing out the relationship among the pictures and the topic of each group of pictures. The instructor also reviews the strategy the students used to identify part-whole relationships.

ABSTRACT EXPERIENCES (present bilingually)

1. Word Classification

The instructor should plan at least seven word classification lessons and present approximately one half these lessons bilingually. In order to help the students begin to think of categories for words, the instructor writes on the chalkboard:

orange, lemon, tangerine, and grapefruit. It is helpful to write the words in Spanish as well as English. Ask the students to provide a label for the words. Some answers may include: fruits, things to eat, things with seeds or peels. However, the most precise label is "citrus fruit" as it is the most accurate. The word classification lessons should progress from easy to difficult. In the first lessons, the words are not related, and the sub-categories and maind categories are provided. The lessons continue with the students providing the sub-categories, and finally they must provide both the sub- and main categories as well as classify related words.

Lesson Content	Student Task
Categories offered/ array of words given	Students write words under correct category heading
List of related words students array lists cateogires unrelated.	Students see relationships among words in a list/infer categories.

An example of the first type of lesson is:

Directions:

1. Each word in the following lists fits into one of the three categories. Write the three catetory headings at the top of your page. Write the words under the correct category.

FOOD	GLASS	TIME
meat	lettuce	week
window	second	hour
grapes	ham	jar
bread	minute	mirror

An example of the last type of lesson is:

Directions: All of the words listed below go together in one

large category. Make a list of the words that belong to the same group or category. Label each sub-category. Then label the large or main category for all the words.

---

a baby's cry	boom	mild
perfume	bitter	pine tree
smoke	amomnia	carrot
music	bell	chocolate

After the completion of each exercise, class discussion follows, during which the instructor asks the students about their thinking processes while they completed the exercise. One such question is "Why did you put this word in this category?" Help the students to see the relationship of the words to the sub- and main categories.

2. Sentences

The sentence lessons begin with the students reading short sentences, multiple choice answers provided. The lessons progress in difficulty, until the students read a group of 4 sentences and write the main idea. The instructor points out to the students that the sentences are related in the same way as the objects, pictures, and words, i.e., the strategy in finding the main idea was the same as finding a relationship among the parts to the whole.

Lesson Content	Student Tasks
Categories given; group of related sentences	Students choose category (main idea) from multiple choice

Using Classification

Categories offered; group of related sentences given with main idea given	Students select the category (main idea) from a group of sentences that includes main idea sentence

An example of the fist type of lesson is:

Directions: Read each group of sentences. Then circle the number of the sentence that best tells the main idea for the other sentences.

1. Mama packed the pots, pans, and skillets in a big box.
2. Papa and my brother put the furniture in the truck.
3. Maria made sure there was nothing left in the backyard.
4. The whole family had to work hard when we moved.

An example of the last type of lessons is:

Directions: Read each group of sentences. Write the main idea of each group of sentence on the line.

1. Carbon exists by itself and several different forms.
2. A diamond is made of carbon.
3. Graphite, used in greasing abutomobiles is made of carbon.
4. The soot in the chimney of a home is carbon.

Each lesson consists of four or five sets of sentences. After the completion of each exercise, a class discussion follows. The instructor explores with the students their strategies in locating the main idea of a group of sentences.

3. Paragraphs.

After completing the previous exercises, the instructor introduces the last phase of the lessons: applying the

classification strategies to help the students identify first the explicit and then the implicit main idea of paragraphs. Before beginning the paragraph exercises, the instructor reminds the students of previous classification tasks and of the relationship between classification and the main idea. The instructor writes on the chalkboard:

topic	main idea
item	detail
item	detail
item	detail

The reader must read and asses each detail of a passage and decide what the details mean when looked at together. The process is similar to generating a main category label (heading) after looking at the sub-category headings and the items listed under each category.

Lesson Content	Student Tasks
Paragraphs offered, with multiple choices	Students choose main idea from multiple choice
Main idea of paragraph offered; students supply main idea	Students must read the paragraph, details, and write important details which support main idea
(lessons continue with explicit ideas/details provided)	
Students infer main idea; paragraph only given	Students must see relationship among sentences in a paragraph and infer the main idea.

The paragraph lessons begin with the students reading a series of paragraphs and circling the topic. The lessons then include exercises for which the students write the details, main idea provided; details are provided and the students write the main idea. The last lessons require the students to

write the implied main idea.

The subject matter of the words and paragraphs includes both abstract and concrete topics. In a Piagetian model, students progress from dealing with concrete experiences to abstract experiences. These lessons, by providing both abstract and concrete subject matter, give the students the opportunity to deal with both types of topics.

An example of the first type of lesson is:

Dirctions: Read the paragraph and the four items which follow. circle the letter for the time that best tells us the main idea of the paragraph.

1) A heavy rain followed by a spell of very cold weather often means death to thousands of cattle. Their wet coats turn into icy sheets. The frozen grass blades turn into uneatable spears of ice. Whole herds of cattle have died during such weather.

a. winter storms

b. how storms can affect cattle

c. what cattle are like in winter

d. why cattle need grass

An example of the last type of lesson is:

Directions: Read each paragraph carefully. List the important details, then write the implied main idea.

1) An ant can pick up an object more than fifty times its own weight. A bee can pull a load more than one hundred fifty times its weight. If we were as strong in proportion to our size, we could pull a five ton trailer truck. If we had the jumping ability of a grasshopper, we could leap a third of the length of

a football field!

DETAILS:

1.

2.

3.

4.

MAIN IDEA:

By the end of the series of lessons, the students have experienced small steps in learning to classify. They experienced success in classifying concrete objects and pictures. Most students enjoy learning these classification techniques. As the lessons progress, the students see the continuing logic of classisification. It has been my experience that before the lessons, most students realize, if only vaguely, the importance of the "main idea", but usually have no real strategy or technique for identiying the main idea. This system of lessons gives the students a very clear idea of the relationship in a paragraph among its details and resulting main idea.

CONCLUSION

Very little is known about the reading processes of Spanish-speaking secondary students; however, the results from research with native speakers of English appear to be applicable to Spanish-speaking students (McInnes, 1980). The process suggested above is one approach that appears to have some noticable effect in helping these students learn a comprehension skill. This

process when used with classes of such students was compared with other classes receiving similar instruction in how to identify the implied main idea. The other classes also received bilingual lessons in how to identify the main idea, but not by means of classification lessons. These lessons were prepared using published textbooks and workbooks. The resulting means on a test of implied main idea were higher for the groups receiving the classification lessons.[1] Although the results need to be verified by other studies, the preliminary results seem to indidate that this method can be a successful method to teach Hispanic secondary students this important comprehension skill.

1. An article discussing the data is being prepared for later publication

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